



SID VEHICLE DISPLAYS AND INTERFACES 2024

31st ANNUAL SYMPOSIUM & EXPO

PROGRAM

September 10-11, 2024

Huntington Place, Detroit, MI

TUESDAY, SEPTEMBER 10, 2024

7:00 am – 5:00 pm **REGISTRATION OPEN**

7:00 am – 8:30 am **BREAKFAST**

8:05 – 8:15 am **Welcoming Remarks**

Michael Bork, Stellantis, Auburn Hills, MI, US

Kai-Han Chang, General Motors Global R&D, Warren, MI, US

8:15 – 9:00 am

KEYNOTE ADDRESS: Nobody Watches TV When It's Off

Ken Mayer, Human Factors and Interaction Design Research Supervisor R&A

Digital Vehicle Technology Engineering, Ford Motor Company, Macomb, MI, US

9:00 am – 7:00 pm **EXHIBITS OPEN**

9:00 – 9:20 am **REFRESHMENT BREAK (Exhibit Hall) *Break supported by***



SESSION 1: AUTOMOTIVE MARKET (Invited Addresses) (9:20 – 10:20 am)

Co-Chairs: Kai-Han Chang, General Motors Global R&D, Warren, MI, US
 Silviu Pala, Automotive Display, Southfield, MI, US

9:20 – 9:40 am

INVITED ADDRESS: Status of the microLED Industry

1.1

Eric Virey, Yole Group, Villeurbanne, France

9:40 – 10:00 am

INVITED ADDRESS

1.2

Bob O'Brien, Display Supply Chain Consultants, Ann Arbor, MI, US

10:00 – 10:20 am **INVITED ADDRESS**
1.3 Brian Rhodes, S&P Global Mobility, Southfield, MI, US

MCITY PRESENTATION (10:20 – 10:50 am)

Presenter: Victoria Waters, Mcity, Ann Arbor, MI, US

EXHIBITOR PRESENTATIONS (10:50 am – 12:10 pm)

Chair: Michael Boyd, Yazaki North America, Canton, MI, US

12:10 – 1:40 pm LUNCH and EXHIBITS

SESSION 2: HEAD-UP DISPLAYS I (1:40 – 3:00 pm)

Chair: Bruce Banter, Tech-D-P Inc., Northville, MI, US

1:40 – 2:00 pm **Microstructured Components for Head-Up Displays (HUD)**
2.1 Katrin Christiani, temicon GmbH, Dortmund, Germany

2:00 – 2:20 pm **Windshield Holographic Film HUDs Transform EV Cost, Safety and Delight!**
2.2 Jonathan D. Waldern, Luminit Inc., Los Angeles, CA, US

2:20 – 2:40 pm **Detection of Objects Obstructing/Blocking the Reflective Displays in
Automobiles**
2.3 Yeshvanth Venkatasubramanya and Rhita Boufelliga, Harman International,
Novi, MI, US

2:40 – 3:00 pm **Runtime Modeling of 2.5D Maps for Immersive 3D Navigation**
2.4 Sunghwan Choi, Jungryul Seo, Taekyoung Kim, Jaebok Choi, and Joonghang Kim,
LG Electronics, Seoul, South Korea

3:00 – 3:20 pm REFRESHMENT BREAK (Exhibit Hall) *Break supported by*



SESSION 3: NEW DISPLAY SOLUTIONS I (3:20 – 4:40 pm)

Chair: Michael Bork, Stellantis, Auburn Hills, MI, US

3:20 – 3:40 pm **From Silicon to Screen: The Role of Semiconductors in Display Evolution**
3.1 Bing Sun, Zahir Alpaslan, Sudipto Bose, Kevin Yang, and Jeff Tuttle,
GlobalFoundries, New York, NY, US

3:40 – 4:00 pm **New High Efficiency & High Luminance Segmented Display Technology for
HMI and Smart Surface Applications**
3.2 Uli Hiller, Erwin Lang, Michael Jobst, Daniel Kraus, Sebastian Wittmann,
Andreas Dobner, Manuel Walch, and Franziska Rausch, ams-OSRAM
International GmbH, Regensburg, Germany

- 4:00 – 4:20 pm
3.3 **Navigating Innovations and Trends in Automotive Displays and HMI**
Stacy (You Xiang) Wu, Omdia, Taipei, Taiwan
- 4:20 – 4:40 pm
3.4 **Development of Vehicle-to-Pedestrian Communication (V2P) Displays**
Cheol Min Park and Byeong Seok Ahn, Hyundai Motors, Hwaseong, South Korea
Seo Young Choi, Jae Kyu Ko, and Mi So Noh, KIEL Institute, Bucheon, South Korea
- 4:40 – 5:00 pm
REFRESHMENT BREAK (Exhibit Hall) *Break supported by*



SESSION 4: OPTICAL ADHESIVES/FILMS (5:00 – 5:40 pm)

Chair: Mark Larry, Ford Motor Co., Macomb, MI, US

- 5:00 – 5:20 pm
4.1 **High-Stability Cadmium-Free Quantum Dot Films for Automotive Display Applications**
ZhongSheng Luo and Jeff Yurek, Nanosys, Milpitas, CA, US
Chia-Yeh Miu, Ubright Optronics, Taoyuan, TW (R.O.C)
- 5:20 – 5:40 pm
4.2 **Nanotechnology-Enhanced Anti-Fogging and Anti-Reflection Solution for Improved Automotive Sensing**
Makiya Ito, Dexerials Corporation, Shimotsuke, Tochigi, Japan
Nelly Soudakova, Dexerials America Corporation, Santa Clara, CA, US
- 5:30 – 7:00 pm
EXHIBIT NETWORKING RECEPTION

WEDNESDAY, SEPTEMBER 11, 2024

7:30 am – 12:00 pm **REGISTRATION OPEN**

7:30 am – 8:00 am **BREAKFAST**

9:00 am – 2:00 pm **EXHIBITS OPEN**

8:00 – 8:15 am **Local SID Chapter Awards/Exhibition Best in Show Announcement**
Michael Bork, Stellantis, Auburn Hills, MI, US

8:15 – 9:00 am **KEYNOTE ADDRESS: Crossing the Cost Chasm to Deliver MicroLED's Benefits to Automotive Use Cases**
Nikhil Balram, CEO, Mojo Vision, Saratoga, CA, US

STUDENT PRESENTATIONS (9:00 – 9:30 am)

Chair: Bob O'Brien, Display Supply Chain Consultants, Ann Arbor, MI, US

SESSION 5: METROLOGY & TOUCH (9:30 – 10:30 am)

Chair: Jerzy Kanicki, University of Michigan, Ann Arbor, MI, US

9:30 – 9:50 am **Correcting AR-HUD Image Distortion and Defects at the Final Assembly Stage**
5.1 B. Stonebridge, I.C. Lassen, and M. Scholz, Radiant Vision Systems, Redmond, WA, US

9:50 – 10:10 am **Enhancing Interface Usability: Widget Selection Parameters, Apple and**
5.2 **Microsoft Design Guidelines, and Research Data**
Tanishka Nalawade, Shiyu Fu, and Paul Allan Green, University of Michigan, Ann Arbor, MI, US

10:10 – 10:30 am **Optimized Workflow for Fast and Precise ISO 15008 Contrast Evaluation under**
5.3 **Ambient Light**
Alexander Voelz, Ingo Rotscholl, and Udo Krüger, TechnoTeam Bildverarbeitung GmbH, Ilmenau, Germany
Achim Pross and Jürgen Gaugele, Mercedes-Benz AG, Stuttgart, Germany
Markus Kreuzer, PhyMore GmbH, Hochdorf, Germany

10:30 – 10:50 am **REFRESHMENT BREAK (Exhibit Hall) *Break supported by***



PANEL DISCUSSION: AI and How It Is Shaping Display Interfaces of the Future (10:50 – 11:20 am)

Moderator: Bob O'Brien, Display Supply Chain Consultants, Ann Arbor, MI, US

Panelists: Alok Warey, GM, Detroit, MI, US
Esaias Pech, Stellantis, Auburn Hills, MI, US
Drew Harbach, Peterbilt Motor Co., Argyle, TX, US
Bill Thompson, Aquent, Boston, MA, US
Additional panelists TBD

SESSION 6: HEAD-UP DISPLAYS II (11:20 am – 12:40 pm)

Chair: Drew Harbach, Peterbilt Motor Co., Argyle, TX, US

- 11:20 – 11:40 am **Perceived Brightness Comparison of High and Low Chromaticity Head-Up Displays**
6.1
Joseph Pullukat, Jay Kantharaja, Ethan To, and Saumil Wagle, NS North America/Nippon Seiki, Troy, MI, US
- 11:40 am – 12:00 pm **Cyclo-disparity and Automotive Displays**
6.2
Daniel Cashen, Michael Bork, Esaias Pech, Emily Robb, and Andrew Averhart, Stellantis, Auburn Hills, MI, US
- 12:00 – 12:20 pm **Three-Dimensional Augmented Reality Head-Up Display**
6.3
Evan Carter, Cemalettin Yilmaz, Kasra Hashemi, and Goksen Yaralioglu, CY Vision Inc., San Jose, CA, US
- 12:20 – 12:40 pm **Automotive HUD Dynamic Backlight with DLP Products Phase Light Modulator Technology**
6.4
Sam Martin, Jorge Gonzalez, Taylor Byrum, and Zach Walker, Texas Instruments Incorporated, Dallas, TX, US
- 12:40 – 2:00 pm LUNCH and EXHIBITS**

SESSION 7: NEW DISPLAY SOLUTIONS II (2:00 – 3:20 pm)

Chair: Kai-Han Chang, General Motors Global R&D, Warren, MI, US

- 2:00 – 2:20 pm **An Invisible Display with High-Definition and High Texture Fidelity**
7.1
Zhiyuan Zhang, Shanrong Zhang, Fan Tian, and Xiongping Li, Tianma Micro-Electronics Group, Shanghai, China
- 2:20 – 2:40 pm **Balancing Cost and Quality Goals with Full-Array Local Dimming Displays**
7.2
John Phillips, Nizar Tarabay, Alexandre Okon, Hyunjin Yoo, and Jean Lorchat, Faurecia Irystec Inc., Montréal, Quebec, Canada
- 2:40 – 3:00 pm **An Automotive Touch and Display Driver Integration IC with Embedded Local Dimming**
7.3

3:00 – 3:20 pm
7.4
Cheng-Chih Deno Hsu, Himax Technologies, HsinChu City, Taiwan
Revolutionizing Automotive Displays and Lighting with Advanced MicroLED Technology
Reza Chaji, VueReal, Waterloo, ON, Canada

3:20 – 3:40 pm
REFRESHMENT BREAK *Break supported by*



SESSION 8: DISPLAY SYSTEMS: COATING, BONDING AND GLASS (3:40 pm – 4:40 pm)

Chair: Michael Koch, DENSO, Southfield, MI

3:40 – 4:00 pm
8.1
Black Dimming for Panoramic Smart Sunroof
Chih-Haw Wang, BenQ Materials Corp., Taoyuan, Taiwan

4:00 – 4:20 pm
8.2
Lamination of Holographic Optical Element Within an Automotive Windshield: Design, Production Trial and Display Performance
Francois Koran, Eastman
Tim Bryan, Carlex
Janice Tardiff, Ford Motor Company, Dearborn, MI, US

4:20 – 4:40 pm
8.3
The Most Sustainable Dynamic Glass for Automotive Glazing and Instrumentation Applications
Steve Marsh, eLstar Dynamics, Eindhoven,
The Netherlands

4:40 – 5:00 pm
REFRESHMENT BREAK *supported by*



SESSION 9: DISPLAY SYSTEMS: LIGHTING (5:00 pm – 6:00 pm)

Chair: Eric Miciuda, Continental Corp., Auburn Hills, MI, US

5:00 – 5:20 pm
9.1
Dynamic Edge Enhancement Method
Ucheol Lee, Brian Hayden, and Paul Weindorf, Visteon Corporation, Van Buren Twp., MI, US

5:20 – 5:40 pm
9.2
Full Area Local Dimming (FALD) Dynamic Halo Mitigation Method
Paul Weindorf, Futoshi Matsumoto, and Brian Hayden, Visteon Corporation, Van Buren Twp., MI, US

5:40 – 6:00 pm
9.3
Digital LED: A Cost-Effective and Energy-Efficient Solution for Next-Generation Automotive Displays
Ivan-Christophe Robin, Severine Cheramy, and Hugues Lebrun, ALEDIA SAS,

Echirolles, France